

CLAIMS

1. The use of Snail in ~~1~~ tumour control, as a repressor of cadherin expression interacting directly with the E-pal element.

2. ~~The use of Snail according to claim 1 to determine the invasive and metastatic capacity of an epithelial tumour, characterised by the following stages:~~

a) determination of the presence of a diagnostic marker, Snail, in the biological sample obtained from this tumour, and

10 b) comparison of the presence of this diagnostic marker with its absence in a control sample, where its presence is indicative of the invasive and metastatic capacity of this epithelial tumour.

3. The use of Snail according to ~~claim 2~~, characterised in that the specific determination of the presence of this diagnostic marker Snail is carried out by using specific anti-Snail antibodies generated from Snail protein.

4. The use of Snail according to ~~claim 2~~, characterised in that the specific determination of the presence of this diagnostic marker Snail is carried out by *in situ* hybridisation for a genetic precursor of this diagnostic marker.

5. The use of Snail according to ~~claim 2~~, characterised in that the specific determination of the presence of this diagnostic marker Snail is carried out by RT-PCR for a genetic precursor of this diagnostic marker, based on extraction of RNA polyA+ of tumour samples and control tissue and the amplification of encoding sequences for this diagnostic marker using appropriate amplimer.

30 6. The use of Snail according to ~~claim 1~~ to identify a compound which inhibits the repressor function of Snail, characterised by the following stages:

a) to add this compound to transformed cells with the ability to express the diagnostic marker Snail,

b) determination of the reduction or total elimination of the ability to express this diagnostic marker in the transformed cells,

5 c) and the selection of this compound for the treatment of tumour invasion and metastasis if these transformed cells present a reduction or total elimination of Snail expression (and a reversal of their invasive and metastatic properties).

10 7. Use of Snail according to ~~claim 6~~ to identify a compound which inhibits the repressor function of Snail based on the use of *S. cerevisiae* yeast strains which express the HIS3 gene under the control of the E-pal element in its native and mutant version, and characterised by the following stages:

15 a) transformation of the yeast strains with the pACT2-mSnail vector, which contains the complete sequence of Snail cDNA in the presence and absence of this compound,

20 b) determination of the growth of transformed yeasts from the strain which expresses the HIS3 gene under the control of native E-pal in the absence of histidine and leucine and in the presence of 3AZT,

25 c) determination of the absence of inhibitory effect of these compounds in yeasts transformed by pACT2-mSnail (mutated Snail) on yeast strains which express the HIS3 gene under control of the native E-pal in the absence of histidine and leucine and in the presence of 3AZT,

d) and selection of this compound for treatment of tumour invasion and metastasis if these *S. cerevisiae* strain cells present a reduction or a total elimination in their growth capacity.

30 8. Use of Snail according to ~~claim 6~~ to identify a compound which inhibits the repressor function of Snail based on the use of *S. cerevisiae* yeast strains which express the gene LacZ under the control of the E-pal element in its native and mutant version, and characterised by the following stages:

a) transformation of the yeast strains with the pACT2-mSnail vector, which contains the complete Snail cDNA sequence, in the presence and absence of this compound,

5 b) determination of β -galactosidase activity of transformed yeasts from the strain which expresses the gene LacZ under the control of native E-pal,

10 c) determination of the absence of inhibitory effect of these compounds in the yeasts transformed by pACT2-mSnail in yeast strains which express the gene LacZ under the control of mutated E-pal,

d) and selection of this compound for the treatment of tumour invasion and metastasis if these *S. cerevisiae* strain cells present a positive detection of β -galactosidase activity.

9. Use of the selected compounds according to any of claims 6 to 8 in the manufacture of a product to treat human pathological processes characterised by their capacity to invade tissues or to metastasise other tissues.

10. Oligonucleotides characterised in that they bind in a complementary way to human Snail messenger RNA and block its expression.

11. Use of oligonucleotides according to claim 10 in the manufacture of a product to treat human pathological processes characterised by their capacity to invade tissues or to metastasise other tissues.

25 12. Use according to claims 9 and 11 characterised in that this pathological process is an epithelial tumour.

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& B'